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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,797	10/16/2003	Sung-Hoon Lee	030681-575	5138

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BUCHANAN, INGERSOLL & ROONEY PC
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ALEXANDRIA, VA 22313-1404

EXAMINER

BELL, BRUCE F

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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01/30/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com
debra.hawkins@bipc.com

Office Action Summary

Application No.

10/685,797

Applicant(s)

LEE ET AL.

Examiner

Bruce F. Bell

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4,13,15-17,22-25 and 28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 4,13,15-17,22-25 and 28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 4, 13, 22, 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al (2002/0034676).

Kim et al disclose a catalyzed porous carbon electrode for a fuel cell. See title. The patent further sets forth a well know catalyst type for methanol fuel cells being that of a platinum alloy on a carbon substrate. See paragraph 0010. The publication sets forth a catalyzed porous carbon electrode wherein an electrically conductive, porous carbon substrate is used and that this substrate is in contact with an electro-deposition solution coating ions of a catalytic metal on the porous substrate. See paragraph 0016. Catalytic metal particles are deposited on the substrate by electro-deposition where they bond to the substrate. See paragraph 0028. Precursor containing ions of a catalytic metal are dissolved in a solvent to form an electro-deposition solution. The catalytic metals are selected from nickel, zinc, platinum and alloys thereof. The electro-deposition solution is infiltrated into the inner part of the porous carbon substrate and the catalytic metal particles are deposited onto the porous carbon substrate. See paragraph 0029. A pulsed potential is applied to the electro-deposition solution, so that the catalytic metal particles are deposited onto the surface and inner part of the porous

carbon substrate. See paragraph 0031. The catalyzed porous carbon substrate includes fine pores through which the electro-depositing solution is permeated into the inner part of the porous carbon substrate so that the catalytic metal particles are deposited electrolytically onto the carbon particles in the inner part of the porous carbon substrate.

See paragraph 0032.

The prior art of Kim et al anticipates the applicants instant invention as shown by way of the disclosure of Kim et al above with respect to the instant claims as presented.

The instant claims set forth a supported catalyst having an electroconductive porous carrier having micropores where the catalyst particles are positioned in the pores of the carrier having an alloy of those constituents listed in the instant claims. The Kim et al publication sets forth an electroconductive porous carrier of a carbon that has a catalyst deposited into the pores wherein catalyst of Zn, Ni and Pt are some of the constituents that may be used in either single metal form or alloyed. Therefore, the prior art of Kim et al shows that an electroconductive porous carrier having an alloy of Zn and Ni is contemplated. Even though the prior art of Kim et al does not specifically set forth the alloy has a stronger oxygen binding force than platinum or a weaker hydrogen binding force than platinum, this appears to be an inherent feature in the alloys as set forth, absent evidence to the contrary. Applicant will probably argue that the supported catalyst is not shown to be specifically the cathode of a direct methanol fuel cell. The examiner acknowledges that this may be true, however, the supported catalyst as instantly claimed is known and how the catalyst is used is of no importance in

determining allowability. A new use for an old product is not patentably distinct and therefore, the rejection above is proper.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 13, 15-17, 22-25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruth et al (20030045425) in combination with Kim et al (20020034676).

Ruth et al disclose a noble metal containing supported catalyst wherein the catalyst metals are chosen from Au, Ag, Pt, Pd, Rh, Ru, Ir, Os or alloys of one or more of these catalyst metals. The supported catalyst are suitable for use in fuel cells. See abstract. Depending on the intended application of the catalyst, different support materials can be used. For use as an anode or cathode catalysts in fuel cells, electrically conductive support materials based on carbon materials such as carbon black, graphite, active carbon and fibrous, graphitic nanotubes are normally used. The noble metal catalyst may be alloyed with at least one base metal of Ti, Zr, V, Cr, Mn, Fe, Co, Ni, Cu and Zn. See paragraph 0024. A preferred use of the catalyst is as the anode or cathode catalyst in fuel cells. See paragraph 0037. The catalyst of the invention is shown to be used in low temperature fuel cells such as those of a PEMFC, DMFC or PAFC. See paragraph 0042.

The prior art of Ruth et al does not implicitly teach that the carbon support is porous and that the catalyst is within the pores of the support.

Kim et al is set forth above in the 35 USC 102 (b) rejection.

The subject matter as a whole would have been obvious to one having ordinary skill in the art to use incorporate the catalyst within the pores of the support as shown by way of Kim et al above since Kim et al discloses the same types of catalyst for use in fuel cell applications and shows that these catalyst can be incorporated within the electrically conductive porous support so that the catalyst can be bonded to the support in a more stable manner so as to provide better bonding of the catalyst to the support. Therefore, the prior art of Ruth et al in combination with Kim et al renders the applicants instant invention as obvious for the reasons stated above.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296.

The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

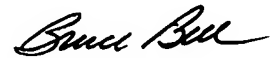
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB
January 9, 2008


Bruce F. Bell
Primary Examiner
Art Unit 1795